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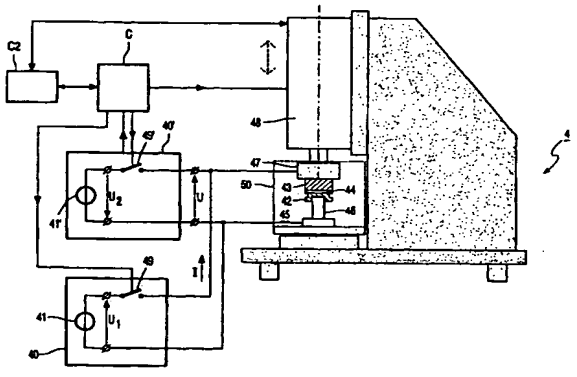
(54) Title: A METHOD, AN APPARATUS, A CONTROL SYSTEM AND A COMPUTER PROGRAM TO PERFORM AN AUTOMATIC REMOVAL OF CATHODE DEPOSITIONS DURING A BIPOLAR ELECTROCHEMICAL MACHINING




(57) Abstract: The invention relates to a method, an apparatus and a computer program for electrochemical machining where a removal of cathode depositions is performed in a fully automated way by means of an application of optimal pulses of a suitable polarity. The method comprises establishing an optimal pulse duration for pulses of the inverse polarity for a removal of the cathode depositions from an electrode surface during the electrochemical machining, said optimal pulse duration being determined from a first calibration carried out preceding the machining of the work piece and a second calibration carried out during the machining of the work piece; performing a control of the machining of the work piece by means of a monitoring of an actual value of an operational parameter and comparing said actual value of the operational parameter to a preset value of the operational parameter; applying a pulse of the inverse polarity of the optimal pulse duration in case the actual value of the operational parameter is greater than the preset value of the operational parameter. The operation of the apparatus 4 in a machining mode is controlled by a process control means C. The operation of the apparatus 4 in an electrode cleaning mode is controlled by the control system C2 arranged to remove the cathode depositions from the surface of the electrode in real time.

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